

Complete listing of the claims:

1. (Cancelled)

2. (Previously presented) An X-ray image radiographing method of radiographing an object of a breast, comprising

a sharpness enhancing step of increasing a sharpness of an image lowered due to penumbra by enhancing an edge of the image with refraction contrast enhancement;

the sharpness enhancing step comprising steps of:

using an X-ray tube having a size D of focal spot defined by the following formula:

$$100 \mu\text{m} \leq D \leq 600 \mu\text{m};$$

setting a distance R1 between the X-ray tube and an object of a breast so as to be within a range defined by the following formula:

$$(D-7)/200 \text{ m} \leq R1 \leq 5 \text{ m}; \text{ and}$$

setting a distance R2 between the object and an X-ray detector so as to be within a range defined by the following formula:

$$0.15 \text{ m} \leq R2 \leq 1.4 \text{ m}.$$

3-5. (Cancelled)

6. (Original) The X-ray image radiographing method of claim 2, wherein the energy of X-ray in a line spectrum is 10 keV to 60 keV.

7. (Original) The X-ray image radiographing method of claim 2, wherein an anode of the X-ray tube contains molybdenum or rhodium.

8. (Original) The X-ray image radiographing method of claim 2, wherein a screen/film system having an image contrast \bar{G} of 1.5 to 3.6 is used.

9. (Original) The X-ray image radiographing method of claim 2, wherein a screen/film system having an image contrast \bar{G} of 1.5 to 4.0 is used.

10. (Original) The X-ray image radiographing method of claim 2, wherein a digital X-ray detector having a size of a pixel of 1 μm to 200 μm is used.

11. (Original) The X-ray image radiographing method of claim 10, wherein an enhanced boundary portion of the object is detected from the obtained image data and a width of the boundary portion and/or image contrast is further enhanced.

12-25. (Cancelled)

26. (Previously Presented) The X-ray image radiographing method of claim 2, wherein the distance R1 satisfies the following formula:

$$0.7 \text{ m} \leq R1 \leq 5 \text{ m}.$$

27. (Previously Presented) An X-ray image radiographing method of radiographing an object of a breast, comprising

a sharpness enhancing step of increasing a sharpness of an image lowered due to penumbra by enhancing an edge of the image with refraction contrast enhancement;

the sharpness enhancing step comprising steps of:

using an X-ray tube having a size D of focal spot defined by the following formula:

$$100 \mu\text{m} \leq D \leq 600 \mu\text{m};$$

setting a distance R1 between the X-ray tube and an object of a breast so as to be within a range defined by the following formula:

$$.46 \text{ m} \leq R1 \leq 5 \text{ m}; \text{ and}$$

setting a distance R2 between the object and an X-ray detector so as to be within a range defined by the following formula:

$$0.15 \text{ m} \leq R2 \leq 1.4 \text{ m}.$$

28. (Previously Presented) The X-ray image radiographing method of claim 27, wherein the energy of X-ray in a line spectrum is 10 keV to 60 keV.

29. (Previously Presented) The X-ray image radiographing method of claim 27, wherein an anode of the X-ray tube contains molybdenum or rhodium.

30. (Previously Presented) The X-ray image radiographing method of claim 27, wherein a screen/film system having an image contrast \bar{G} of 1.5 to 3.6 is used.

31. (Previously Presented) The X-ray image radiographing method of claim 27, wherein a screen/film system having an image contrast \bar{G} of 1.5 to 4.0 is used.

32. (Previously Presented) The X-ray image radiographing method of claim 27, wherein a digital X-ray detector having a size of a pixel of 1 μm to 200 μm is used.

33. (Previously Presented) The X-ray image radiographing method of claim 32, wherein an enhanced boundary portion of the object is detected from the obtained image data and a width of the boundary portion and/or image contrast is further enhanced.

34. (Previously Presented) The X-ray image radiographing method of claim 27, wherein the distance R1 satisfies the following formula:

$$0.7 \text{ m} \leq R1 \leq 5 \text{ m}.$$